

2008 North Dakota State University Combined Research and Extension Plan of Work

I. Plan Overview

1. Brief Summary about Plan Of Work

The NDSU Extension Service and the North Dakota Agricultural Experiment Station are integral units of North Dakota State University. The main campus is located at Fargo, North Dakota. The extension service and experiment station serve the citizens of the state through the main campus as well as 53 extension offices located in 52 counties and one American Indian reservation, seven research extension centers located across the state, and three additional area extension offices.

The purpose of the NDSU Extension Service is to create learning partnerships that help adults and youth enhance their lives and communities. Extension programs address issues and opportunities in the areas of agriculture and natural resources; 4-H youth development; family and consumer sciences; and community, leadership and economic development. Emerging areas of concern are increased pressure on natural resources, natural disasters, bioterrorism and foreign animal diseases, rural community decline, population shifts, and local leadership.

The mission of the North Dakota Agricultural Experiment Station is to develop and disseminate technology important to the production and utilization of food, feed, fiber and fuel from crop and livestock enterprises. The research must provide for an enhancement of the quality of life, sustainability of production, and protection of the environment. Present goals are research and development of new technologies for the production and management of new and emerging crops; collaboration with four states to improve livestock nutrition; investigation of possible benefits of carbon sequestration; developing sustainable production strategies for western North Dakota; and developing strategies to control invasive species.

Agriculture is a critical component to the state's economy. Food/fiber production accounts for more than \$4 billion annually. Crop production accounts for about 70% of total farm revenues. North Dakota is first in the national in the production of eleven crops. Livestock production is centered on beef, dairy, swine and sheep.

Future directions include developing new and more competitive crop products, and new uses for diverse crops and novel plant species; developing new products and new uses for animals; reducing the risks of local and global climatic change on food, fiber and fuel production; providing the information and knowledge needed to further improve environmental stewardship; improving the economic return to agricultural producers; strengthening our communities and families; and ensuring improved food safety and health through agricultural and food systems.

Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2008	175.0	0.0	454.0	0.0
2009	175.0	0.0	454.0	0.0
2010	175.0	0.0	454.0	0.0
2011	175.0	0.0	454.0	0.0
2012	175.0	0.0	454.0	0.0

II. Merit Review Process

1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

- Internal University Panel
- External University Panel
- Combined External and Internal University Panel
- Expert Peer Review

2. Brief Explanation

Extension program leaders from North Dakota, South Dakota, Nebraska and Kansas meet to develop joint program opportunities for these four states. They exchange ideas on plans of work in agriculture and natural resources, family and consumer science, 4-H youth development, and community resource development in an effort to increase the effectiveness of programs in their states; and programs impacting all four states have been developed as a result of these regular planning meetings. A more formal agreement between the four states will be pursued to exchange mutual merit reviews of Extension programs. In addition, program leaders from the entire North Central Region meet twice a year to exchange ideas on plans of work for the whole region. Research programs are subject to four different types of scientific peer review. These reviews occur prior to, during and at the conclusion of each research project. First, research faculty who participate in multi-state research projects receive a critical review of their contributing project from fellow committee members, the administrative adviser and the North Central Multi-State Research Committee. Second, most faculty augment multi-state research funding with competitive grants. These grants are awarded on the basis of scientific merit and afford an opportunity for external peer review. Third, each research faculty member with the North Dakota Agricultural Experiment Station is required to have a station project that is reviewed for scientific merit by a Project Review Committee that is comprised of one faculty member from each discipline. Finally, all research is peer reviewed, either internally or externally, prior to publication.

III. Evaluation of Multis & Joint Activities

1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

The State Board of Agricultural Research and Education (SBARE), county advisory councils, focus groups and our own extension staff identified the issues addressed in most planned program activities. The targeted audiences for these programs were inclusive of all people with a vested interest in the issue. Many programs are on-going or multiple years in length. However, specific impacts were noted where applicable. Most of these activities resulted in time efficiencies for the extension educator, and they provided a complete educational experience for the end user.

2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

A major under-served and under-represented audience in North Dakota is Native Americans, and increased emphasis is being given to work more closely with this group, especially those living on the four American Indian reservations in the state. Our Fort Berthold office is staffed with two full-time extension agents (one in agriculture and one in 4-H youth development, along with Family Nutrition Program (FNP), and Expanded Food and Nutrition Education Program (EFNEP) staff. Our Sioux County office is staffed with a full-time agent in family and consumer sciences and shares an agricultural agent with an adjoining county. Sioux County, too, has FNP and EFNEP staff. The other two reservations are served by the extension agents in the county in which the reservation lies. Both of these extension offices have specific programs directed towards Native American audiences. Extension programs include expanded educational efforts with Native American farmers both in crop and livestock production as well as targeted youth programming, and family and nutrition programming. Two reservations are involved with NDSU livestock specialists working with their cattle producers on range management. An NDSU irrigation specialist is working with the 1994 institutions on programs involved with utilization of native plants, plant diversity and gardens for self-sufficiency. The NDSU Extension Service participates in annual meetings with the reservations to discuss how USDA services can better meet the needs of the American Indian audiences living on the reservations. Many nutrition programs focus on both Native American and low-income families. These programs provide education on selecting and preparing nutritious meals on a limited budget. Diabetes is a major problem with the state's Native Americans, so a planned program focuses on the reduction of the incidence of diabetes through diet and exercise. A major youth program on one reservation focuses on community gardening to improve food resources, increase knowledge about food choices, and promote health eating by including more fruits and vegetables in the diet. This program is supported by resources from other community agencies, including resources from the Three Affiliated Tribes at Fort Berthold and the National Gardening Association. Another program on the same reservation is helping youth in a 4-H lamb project.

3. How will the planned programs describe the expected outcomes and impacts?

The planned programs submitted have specific outcomes that will occur over a period of five years. In some programs, outcomes and impacts will occur in the first year but many impacts will occur throughout the five-year period and beyond. Under each planned program, specific progress toward the outcomes and impacts will be documented.

4. How will the planned programs result in improved program effectiveness and/or efficiency?

At North Dakota State University, research and extension programs have a historic and strong connection that increases the effectiveness of both entities. In most programs, the results of extension education and demonstration activities inform the research community on clientele needs. Specific examples of the effectiveness and/or efficiency of these programs are described in the Planned Programs section of this Plan of Work.

IV. Stakeholder Input

1. Actions taken to seek stakeholder input that encourages their participation

- Survey specifically with non-traditional groups
- Targeted invitation to traditional stakeholder individuals
- Survey of traditional stakeholder individuals
- Survey of traditional stakeholder groups
- Use of media to announce public meetings and listening sessions
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder groups

Brief explanation.

Building linkages with the public enables us to discover information about community/county/district/state assets and needs. Various methods for stakeholder input are utilized on an on-going basis. Input from stakeholders, the general public and from targeted audiences is used to develop our five-year plan of work and to make adjustments to the plan based on crisis situations that may develop in the state, e.g. drought, flood, insect infestations, plant diseases, high-risk issues of youth, food borne illnesses, security issues. Using several methods to collect data ensure that high priority issues are identified, people that have a self-interest in the issue are brought to the planning meetings, and an educational design is developed to address the issue using a variety of delivery methods.

2(A). A brief statement of the process that will be used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use External Focus Groups
- Use Advisory Committees
- Use Internal Focus Groups
- Needs Assessments
- Open Listening Sessions
- Use Surveys

Brief explanation.

The State Board for Agricultural Research and Education (SBARE) is charged with determining the causes of any adverse economic impacts on crops and livestock produced in this state; developing ongoing strategies for the provision of research solutions to negate adverse economic impacts on crops and livestock produced in this state; developing ongoing strategies for the dissemination of research information through the extension service; annually evaluating the results of research and extension activities and expenditures; and reporting the findings to the North Dakota Legislative Council and the State Board of Higher Education.

County commissioners actively participate in county extension program reviews. The county extension budgeting process also results in strong engagement from county government.

In 1992, the North Dakota Department of Human Services and NDSU Extension Service were legislated by the North Dakota state legislature to form a statewide Family Life Education Committee. The committee is composed of state legislators, an Extension specialist, an Extension Human Development Agent, citizens with a parenting self-interest, two administrators from the Child Division of the State Department of Human Services and the Extension Assistant Director, Nutrition, Youth and Family Science. As a result of this partnership, the state Department of Human Services provides funding opportunities to six state family life education centers through a request for proposal process. The availability of designated funds also directs the focus of the parenting education programs provided through the six family life education center coordinators. The six family life education coordinators provide evaluation feedback to the Family Life Education Committee of the state Department of Human Services on

program impacts. These impacts are then shared with state legislators.

The ND Department of Health, under the direction of the Governor of North Dakota, formed an alliance of organizations in ND that provide significant support and leadership for health-related initiatives. NDSU Extension is represented on this coalition. Networking among these professionals is invaluable, in addition to the legislative work.

A number of government and non-governmental units have formed a coalition to address the financial needs of North Dakotans. Saving more and reducing credit card debt are two of the key issues being addressed. NDSU Extension is a part of the team, and indeed, has a significant contribution as our Family Financial Specialist, also co-chaired the eXtension effort on financial security for all.

2(B). A brief statement of the process that will be used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Survey of traditional Stakeholder individuals
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals

Brief explanation

The State Board for Agricultural Research and Education (SBARE) meets frequently during the fiscal year and attendance often includes department chairs from the College of Agriculture, Food Systems and Natural Resources, and research extension center directors. The meetings focus on assessing current programs, and identifying issues and needs for new programs. The purpose of SBARE is to determine how experiment station and extension service budget dollars are allocated for programming. Individual citizens and commodity group representatives provide direct input. During staff evaluations each year, programming input is gathered from commissioners who take part in the staff evaluations. The county extension budgeting process also results in strong engagement from county government. This arrangement helps assure that extension programs are grass roots driven and are focused on local issues and needs. The seven research extension centers (RECs) hold winter meetings with their citizen advisory boards that focus on issue identification for both research and extension programming. REC staff not only use this input to set program direction for the center but also convey it to main station researchers and to SBARE. In 1992, the North Dakota Department of Human Services and NDSU Extension Service were legislated by the North Dakota state legislature to form a statewide Family Life Education Committee. The purpose of this committee is to provide guidance for the parenting education needs and support of individuals at all points within the family life cycle. The committee meets six times per year to identify issues, plan, implement, and evaluate parenting education programs.

3. A statement of how the input will be considered

- Redirect Research Programs
- In the Action Plans
- In the Budget Process
- Redirect Extension Programs
- To Set Priorities
- To Identify Emerging Issues

Brief explanation.

The State Board for Agricultural Research and Education (SBARE) is charged with developing ongoing strategies for the dissemination of research information through the extension service; annually evaluating the results of research and extension activities and expenditures; and reporting the findings to the North Dakota Legislative Council and the State Board of Higher Education. Their findings directly affect the budgeting process.

The staff from the seven research extension centers (RECs) uses the input from winter meetings with their advisory boards to set program direction for their center. During county staff evaluations each year, programming input is gathered from commissioners who take part in the staff evaluations. This arrangement helps assure that extension programs are grass roots driven and are focused on local issues and needs. The statewide Family Life Education Committee, composed of state legislators, an Extension specialist, an Extension Human Development Agent, citizens with a parenting self-interest, two administrators from the Child Division of the State Department of Human Services and the Extension Assistant Director, Nutrition, Youth and Family Science determine the availability of designated funds which direct the focus of the parenting education programs provided through the six

family life education center coordinators. The six family life education coordinators provide evaluation feedback to the Family Life Education Committee of the state Department of Human Services on program impacts. These impacts are then shared with state legislators which in turn affect budgeting.

V. Planned Program Table of Content

S. NO.	PROGRAM NAME
1	Biofuels
2	Center for Nutrition and Pregnancy
3	Citizenship and Leadership Development
4	Developing Leadership Systems
5	Economics of Crop Production
6	Energy in Crop Agriculture
7	Family Meals
8	Financial Security for All
9	Food Safety
10	Fusarium head blight of wheat
11	Healthy Patterns of Eating & Physical Activity
12	Insect Management
13	Livestock Waste Management
14	Noxious and Invasive Weed Management
15	Nutrition of Grazing Livestock
16	Parent Education
17	Plant Breeding
18	Soil Science
19	Weed Science

V(A). Planned Program (Summary)

1. Name of the Planned Program

Biofuels

2. Brief summary about Planned Program

Petroleum supplies more than 95 percent of our transportation fuel needs. Increasing national and global demand for a limited petroleum supply has contributed to large increases in fuel costs. Biobased transportation fuels will strengthen rural economies by adding value to crop residues while decreasing agriculture-related fuel costs. Additional benefits include decreased national reliance on foreign energy sources and the environmental benefits of reduced greenhouse gas emissions.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 403 10% Waste Disposal, Recycling, and Reuse
- 511 80% New and Improved Non-Food Products and Processes
- 512 10% Quality Maintenance in Storing and Marketing Non-Food Products

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Petroleum supplies more than 95 percent of our transportation fuel needs. Increasing national and global demand for a limited petroleum supply has contributed to large increases in fuel costs. Biobased transportation fuels will strengthen rural economies by adding value to crops and crop residues while decreasing agriculture-related fuel costs. Additional benefits include decreased national reliance on foreign energy sources and the environmental benefits of reduced greenhouse gas emissions. Priorities include making significant improvements in biomass collection, storage, transportation, pre-processing and conversion. Additional challenges are in the areas of process economics, economic policy, agronomics, crop development, product quality and marketing.

2. Scope of the Program

- Integrated Research and Extension
- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Funding will remain available to do this research. Petroleum supplies will be limited due to increasing national and global demand. Federal and state support will increase. Public support will be a driving force.

2. Ultimate goal(s) of this Program

Biofuels research is viewed as an area of strength for NDSU.
Quality of biofuels research at NDSU is recognized by funding agencies and peer institutions.
Strong institutional culture of collaborative, interdisciplinary research in biofuels.
Improved economic viability of production agriculture and related industries.
Displacement of some petroleum resources.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	0.6	0.0	3.4	0.0
2009	0.6	0.0	3.4	0.0
2010	0.6	0.0	3.4	0.0
2011	0.6	0.0	3.4	0.0
2012	0.6	0.0	3.4	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Identify research needs critical to North Dakota.
 Identify NDSU faculty, industries and other universities for collaboration.
 Expand research infrastructure and faculty expertise.
 Present results through publications and conference presentations.
 Educate through extension programming.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Group Discussion ● Workshop 	<ul style="list-style-type: none"> ● Web sites ● Newsletters

3. Description of targeted audience

Farmers
 Policymakers
 Biomass processors
 Equipment manufacturers
 Peer researchers
 Students
 The public

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	100	0	0	0
2009	125	0	0	0
2010	150	0	0	0
2011	175	0	0	0
2012	200	0	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	3	0
2009	4	0
2010	5	0
2011	6	0
2012	6	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Number of faculty collaborations working on biofuels projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :18 2009 : 20 2010 : 20 2011 :20 2012 : 20

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

1. Outcome Target

Number of proposals submitted for biofuels projects.

2. Outcome Type : Change in Action Outcome Measure

2008 :12 2009 : 14 2010 : 15 2011 :15 2012 : 20

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

1. Outcome Target

Number of graduate students working on biofuels projects.

2. Outcome Type : Change in Action Outcome Measure

2008 :3 2009 : 4 2010 : 4 2011 :6 2012 : 6

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

1. Outcome Target

Number of biofuels-related papers published by NDSU faculty.

2. Outcome Type : Change in Action Outcome Measure

2008 :6 2009 : 6 2010 : 8 2011 :8 2012 : 10

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

1. Outcome Target

Number of biofuels research proposals submitted.

2. Outcome Type : Change in Action Outcome Measure

2008 :12 2009 : 14 2010 : 15 2011 :15 2012 : 20

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

1. Outcome Target

Grant money received for biofuels research.

2. Outcome Type : Change in Action Outcome Measure

2008 :1000000 2009 : 1500000 2010 : 2000000 2011 :2250000 2012 : 2500000

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse

- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

1. Outcome Target

Increased demand for NDSU graduate students in academia/industry.

2. Outcome Type : Change in Condition Outcome Measure

2008 :6 2009 : 8 2010 : 10 2011 :12 2012 : 12

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

1. Outcome Target

Increase in quality/quantity of student applicants in biofuels-related fields.

2. Outcome Type : Change in Condition Outcome Measure

2008 :5 2009 : 6 2010 : 6 2011 :8 2012 : 8

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

1. Outcome Target

Increased funding rate for NDSU biofuels research proposals.

2. Outcome Type : Change in Condition Outcome Measure

2008 :500000 2009 : 250000 2010 : 500000 2011 :500000 2012 : 500000

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

1. Outcome Target

Biobased industries seek out NDSU faculty for collaborations on biofuels projects.

2. Outcome Type : Change in Condition Outcome Measure

2008 :6 2009 : 8 2010 : 10 2011 :10 2012 : 12

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

1. Outcome Target

State and federal policymakers seek out NDSU faculty input.

2. Outcome Type : Change in Condition Outcome Measure

2008 :8

2009 : 10

2010 : 12

2011 :15

2012 : 15

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Appropriations changes
- Competing Public priorities
- Government Regulations
- Natural Disasters (drought,weather extremes,etc.)
- Public Policy changes

Description

Research funding priorities, public opinion, cost of petroleum, conversion technology breakthroughs, development of competing energy technologies, competing land uses (agricultural and other), public recognition of global climate change, effect of climate change on agricultural productivity may affect activity and productivity.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Time series (multiple points before and after program)
- Before-After (before and after program)
- Comparisons between program participants (individuals,group,organizations) and non-participants

Description

Evaluation studies and data collection will be done before, during, and after the program. Data and results will be compared between program participants.

2. Data Collection Methods

- Tests
- Sampling
- Observation

Description

Data will be collected using scientific method to include sampling, testing, and observation.

V(A). Planned Program (Summary)

1. Name of the Planned Program

Center for Nutrition and Pregnancy

2. Brief summary about Planned Program

Increasing evidence suggests that fetal development plays a role in postnatal growth, development, productivity, reproductive success, and fetal survival, as well as long-term health and longevity of offspring. Improved understanding of the impacts of reproductive function, especially nutritional modulation, will result in improved livestock productivity and enhanced human health.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 301 40% Reproductive Performance of Animals
- 302 40% Nutrient Utilization in Animals
- 305 10% Animal Physiological Processes
- 702 10% Requirements and Function of Nutrients and Other Food Components

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Increasing evidence suggests that fetal development plays a role in postnatal growth, development, productivity, reproductive success, and fetal survival, as well as long-term health and longevity of offspring. Improved understanding of the impacts of reproductive function, especially nutritional modulation, will result in improved livestock productivity and enhanced human health. Priorities are to develop nutritional strategies that promote fetal and neonatal growth and development resulting in offspring that are healthy throughout infancy, adolescence and adulthood; promote maternal health and well being; and improve quality and nutritional value of resulting food products.

2. Scope of the Program

- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Funding will remain available to do this research. Long-term health and longevity of offspring will be continue to be a focus of attention for animals and humans.

2. Ultimate goal(s) of this Program

Improved livestock and human health
Increased research capacity
Increased livestock production efficiency
Improved understanding of long-term nutritional impacts on product quality in livestock production systems

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	0.0	0.0	4.0	0.0
2009	0.0	0.0	4.0	0.0
2010	0.0	0.0	4.0	0.0
2011	0.0	0.0	4.0	0.0
2012	0.0	0.0	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Research projects
- Train students
- Publish research
- Secure funding
- Develop recommendations
- Identify emerging trends and issues
- Improve methodology
- Collaborate

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Workshop ● Education Class ● Group Discussion 	<ul style="list-style-type: none"> ● Newsletters ● TV Media Programs ● Web sites

3. Description of targeted audience

- Students: graduate and under-graduate
- Livestock producers
- Human health professionals
- Scientific peer groups
- Policy and agency influences
- Media professionals

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0
2012	0	0	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	12	0
2009	14	0
2010	14	0
2011	14	0
2012	14	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Numbers of producers with enhanced knowledge from livestock programming events

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :30 2009 : 40 2010 : 40 2011 :25 2012 : 25

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 702 - Requirements and Function of Nutrients and Other Food Components

1. Outcome Target

Number of grant requests for multidisciplinary educational, extension and research collaborative activities

2. Outcome Type : Change in Action Outcome Measure

2008 :5 2009 : 5 2010 : 5 2011 :5 2012 : 5

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 702 - Requirements and Function of Nutrients and Other Food Components

1. Outcome Target

Number of visiting scientists to the NDSU Department of Animal and Range Sciences

2. Outcome Type : Change in Action Outcome Measure

2008 :5 2009 : 5 2010 : 5 2011 :5 2012 : 5

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 702 - Requirements and Function of Nutrients and Other Food Components

1. Outcome Target

Monitor cases of pregnancy-based metabolic diseases

2. Outcome Type : Change in Condition Outcome Measure

2008 :0 2009 : 0 2010 : 0 2011 :0 2012 : 0

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 702 - Requirements and Function of Nutrients and Other Food Components

1. Outcome Target

Monitor North Dakota agricultural statistics to measure pregnancy rates of North Dakota livestock operations

2. Outcome Type : Change in Condition Outcome Measure

2008 :0 2009 : 0 2010 : 0 2011 :0 2012 : 0

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Government Regulations
- Public Policy changes
- Competing Public priorities
- Competing Programatic Challenges
- Economy

Description

Decreased funding, changing priorities, producer attitudes, economic conditions, change in focus of agencies and the institution.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)
- Retrospective (post program)

Description

{NO DATA ENTERED}

2. Data Collection Methods

- On-Site

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Citizenship and Leadership Development

2. Brief summary about Planned Program

Youth need a connection and sense of purpose within their community. 4-H youth development is in the unique position to help youth develop citizenship and leadership skills through activities and opportunities including, but not limited to, 4-H community clubs, school enrichment, community development and short-term and special interest programs. By developing youth civic activism, 4-H youth development insures a future generation of productive North Dakota citizens and tomorrow's community leaders.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 806 100% Youth Development

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Youth need a connection and sense of purpose within their community. 4-H youth development is in the unique position to help youth develop citizenship and leadership skills through activities and opportunities including ,but not limited to, 4-H community clubs, school enrichment, community development and short-term and special interest programs. By developing youth civic activism, 4-H youth development ensures a future generation of productive North Dakota citizens and tomorrow's community leaders. The priority is to develop youth civic engagement to enhance their leadership skills and to become active citizens in their community.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

4-H will remain an important youth program. Communities need youth to be involved to remain vibrant.

2. Ultimate goal(s) of this Program

More youth are involved in leadership roles in their community. Youth governmental board would be developed to influence legislation affecting youth. Youth are involved in community organizations as partners.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	2.0	0.0	0.0	0.0
2009	2.0	0.0	0.0	0.0
2010	2.0	0.0	0.0	0.0
2011	2.0	0.0	0.0	0.0
2012	2.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Develop Leadership Training module Contribution module to include how community service leads to belonging, independence, mastery and generosity Future modules on youth involvement, diversity, civic engagement and teamwork

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Group Discussion ● Workshop 	<ul style="list-style-type: none"> ● Newsletters ● Web sites

3. Description of targeted audience

4-H youth 4-H youth leaders 4-H adult leaders County extension staff Other community organizations, councils and boards

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	400	1000	200	1000
2009	800	1500	300	1500
2010	800	2000	400	1500
2011	500	3000	500	1000
2012	500	3000	500	1000

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	0	0
2009	0	0
2010	0	0
2011	0	0
2012	0	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Fifty percent of clubs will have someone complete contribution module.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :240

2009 : 0

2010 : 0

2011 :0

2012 : 0

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

Forty percent of clubs will do one or more community service projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :200

2009 : 0

2010 : 0

2011 :0

2012 : 0

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

Twenty-five percent of county 4-H leadership will complete leadership modules.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :450

2009 : 0

2010 : 0

2011 :0

2012 : 0

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

One hundred community service projects will be reported.

2. Outcome Type : Change in Action Outcome Measure

2008 :100

2009 : 100

2010 : 0

2011 :0

2012 : 0

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

Fifty percent of county 4-H leadership will complete leadership modules.

2. Outcome Type : Change in Action Outcome Measure

2008 :0 2009 : 400 2010 : 700 2011 :0 2012 : 0

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

Five percent of county 4-H leadership completing leadership modules will report more civic activism.

2. Outcome Type : Change in Action Outcome Measure

2008 :0 2009 : 50 2010 : 75 2011 :0 2012 : 0

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

Fifty percent of clubs will report contributions to their community.

2. Outcome Type : Change in Condition Outcome Measure

2008 :0 2009 : 0 2010 : 0 2011 :250 2012 : 250

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

Seventy-five percent of county 4-H leadership will complete leadership modules.

2. Outcome Type : Change in Condition Outcome Measure

2008 :0 2009 : 0 2010 : 0 2011 :1000 2012 : 1000

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

Twenty-five percent of county 4-H leadership who complete leadership modules will report more civic activism.

2. Outcome Type : Change in Condition Outcome Measure

2008 :0 2009 : 0 2010 : 0 2011 :250 2012 : 250

3. Associated Knowledge Area(s)

- 806 - Youth Development

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Populations changes (immigration,new cultural groupings,etc.)
- Competing Public priorities

Description

Local community needs, changing demographics, and advancement in technology will effect the use of training materials.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Retrospective (post program)
- During (during program)

Description

The evaluation of youth contribution to community will seek answers to: How is 4-H affecting the community? Is service to community affecting the youth involved? Is youth citizenship and leadership involvement increasing? Is there an increase in the number of service to community projects? What is the economic affect of youth service to community projects?

2. Data Collection Methods

- Sampling
- Other (Service to community reports)
- On-Site
- Observation

Description

Participants using leadership modules will be asked about their involvement in community Clubs doing community service projects will be asked to report their service projects.

V(A). Planned Program (Summary)

1. Name of the Planned Program

Developing Leadership Systems

2. Brief summary about Planned Program

The foundation of community and economic development in North Dakota is local leadership, including the identification and development of current and emerging leaders, programs to strengthen leadership, and local capacity to enhance community self-sufficiency.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 803 50% Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 50% Community Institutions, Health, and Social Services

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

The foundation of community and economic development in North Dakota is local leadership, including the identification and development of current and emerging leaders, programs to strengthen leadership, and local capacity to enhance community self-sufficiency. Priorities include developing leadership systems, strengthening emerging and existing leaders' knowledge and skills, and strengthening youth-adult partnerships.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

If North Dakota leadership systems are enhanced, then the current and emerging youth and adult leaders will be actively involved in strengthening the region in which they live.

2. Ultimate goal(s) of this Program

Youth and adults are engaged in leadership roles. The quality of life for individuals, organizations and communities will be improved. Youth and adults partner for community improvement.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	4.2	0.0	0.0	0.0
2009	5.0	0.0	0.0	0.0
2010	5.0	0.0	0.0	0.0
2011	5.0	0.0	0.0	0.0
2012	5.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Rural Leadership North Dakota program Horizons project Leadership Plenty Study Circles Ethical Leadership Generational Leadership

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Group Discussion ● Workshop 	<ul style="list-style-type: none"> ● TV Media Programs ● Newsletters ● Web sites

3. Description of targeted audience

Youth Schools Elected officials Community asset builders Community collaborators Association of Counties Service groups Governor's office Chamber Economic developers Higher Education SBARE RLND Soil Conservation Districts

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	1350	1700	400	600
2009	700	1700	750	1000
2010	700	1700	750	1000
2011	700	1700	750	1000
2012	700	1700	750	1000

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 : 0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	1	0
2009	2	0
2010	1	0
2011	1	0
2012	1	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Number of community members who display leadership skills sets

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1350 2009 : 700 2010 : 700 2011 :700 2012 : 700

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

1. Outcome Target

Number of community members who understand how they can be involved in leadership roles

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1350 2009 : 700 2010 : 700 2011 :700 2012 : 700

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

1. Outcome Target

Number of people from diverse backgrounds involved

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :22 2009 : 32 2010 : 32 2011 :32 2012 : 32

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

1. Outcome Target

Number of community projects being accomplished and reported on

2. Outcome Type : Change in Action Outcome Measure

2008 :35 2009 : 40 2010 : 40 2011 :40 2012 : 40

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

1. Outcome Target

Number of non-traditional leaders including youth

2. Outcome Type : Change in Action Outcome Measure

2008 :30 2009 : 15 2010 : 17 2011 :17 2012 : 17

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

1. Outcome Target

Number of individuals available in communities for leadership on community organizations

2. Outcome Type : Change in Condition Outcome Measure

2008 :1350 2009 : 700 2010 : 700 2011 :700 2012 : 700

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

1. Outcome Target

Number of community organizations with youth on boards

2. Outcome Type : Change in Condition Outcome Measure

2008 :25 2009 : 25 2010 : 35 2011 :35 2012 : 35

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Populations changes (immigration,new cultural groupings,etc.)
- Government Regulations
- Appropriations changes
- Competing Public priorities
- Public Policy changes
- Economy
- Competing Programatic Challenges

Description

Number of CEDL personnel, partnerships and regional receptivity to change.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- Time series (multiple points before and after program)
- Retrospective (post program)
- During (during program)

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Telephone
- Structured
- Sampling
- On-Site

Description

Pre-post surveys of program participants. Qualitative interviews through a panel study.

V(A). Planned Program (Summary)

1. Name of the Planned Program

Economics of Crop Production

2. Brief summary about Planned Program

Crop net returns are vital to producers and the North Dakota economy. Crop producers are attempting to improve profitability by examining management choices that work best with the government farm program. Considerable variability exists among producers in their level of knowledge.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 601 25% Economics of Agricultural Production and Farm Management
- 602 25% Business Management, Finance, and Taxation
- 603 25% Market Economics
- 604 25% Marketing and Distribution Practices

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Crop net returns are vital to producers and the North Dakota economy. Crop producers are attempting to improve profitability by examining management choices that work best with the government farm program. Considerable variability exists among producers in their level of knowledge. Priorities are enterprise alternatives; land and machinery economics; crop insurance; financial record keeping; income tax management; marketing tools and strategies; and marketing clubs.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Crop production is the major agricultural sector in North Dakota. Management choices that work best with the government farm program will be key to net returns of producers.

2. Ultimate goal(s) of this Program

Producers are managing risks more effectively.
Producers are employing more effective management practices.
Farms are becoming more profitable.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	9.0	0.0	0.0	0.0
2009	9.0	0.0	0.0	0.0
2010	9.0	0.0	0.0	0.0
2011	9.0	0.0	0.0	0.0
2012	9.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Identify emerging issue.

Provide enterprise budgets, resource use alternatives, crop insurance options, marketing strategies and other resource material reflecting best management practices.

Evaluate effectiveness of alternative management practices.

Develop presentation materials.

Offer in-service education, presentations and workshops.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Group Discussion ● Workshop 	<ul style="list-style-type: none"> ● Newsletters ● Web sites

3. Description of targeted audience

Owners, managers and employees of farm operations

Marketing club members and facilitators

Agribusiness and government agency personnel

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	5000	250000	0	0
2009	5000	250000	0	0
2010	5000	250000	0	0
2011	5000	250000	0	0
2012	0	250000	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	0	0
2009	0	0
2010	0	0
2011	0	0
2012	0	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Number of producers and others attending workshops, marketing clubs and other events.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :5000 2009 : 5000 2010 : 5000 2011 :5000 2012 : 5000

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices

1. Outcome Target

Number of participants demonstrating an increase in subject knowledge and skills.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :2500 2009 : 2500 2010 : 2500 2011 :2500 2012 : 2500

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices

1. Outcome Target

Evidence of producers employing enterprise budgets, using computerized decision-making tools, writing marketing plans and adopting recommended management tools.

2. Outcome Type : Change in Action Outcome Measure

2008 :15000 **2009 :** 15000 **2010 :** 15000 **2011 :**15000 **2012 :** 15000

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices

1. Outcome Target

Number of marketing clubs in the state.

2. Outcome Type : Change in Action Outcome Measure

2008 :50 **2009 :** 50 **2010 :** 50 **2011 :**50 **2012 :** 50

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices

1. Outcome Target

Evidence of producers having a more productive working relationship with agriculture service personnel.

2. Outcome Type : Change in Action Outcome Measure

2008 :10000 **2009 :** 10000 **2010 :** 10000 **2011 :**10000 **2012 :** 10000

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices

1. Outcome Target

Evidence of producers implementing activities indicated by the management tools.

2. Outcome Type : Change in Condition Outcome Measure

2008 :7500 **2009 :** 7500 **2010 :** 7500 **2011 :**7500 **2012 :** 7500

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices

1. Outcome Target

Evidence of benefits from marketing club participation and best management practice implementation.

2. Outcome Type : Change in Condition Outcome Measure

2008 :90000000 **2009 :** 90000000 **2010 :** 90000000 **2011 :**90000000 **2012 :** 90000000

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices

1. Outcome Target

Estimated value of adopted best management practices to the individual and to the state.

2. Outcome Type : Change in Condition Outcome Measure

2008 :90000000 **2009 :** 90000000 **2010 :** 90000000 **2011 :**90000000 **2012 :** 90000000

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Other (Farmer attitudes)
- Competing Programatic Challenges

Description

{NO DATA ENTERED}

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Mail
- On-Site

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Energy in Crop Agriculture

2. Brief summary about Planned Program

Agriculture is a large user and potential producer of energy. Since the 1970s, agriculture has made progress in reducing energy use and supporting industries that have the potential to produce energy from agricultural products, but more progress is needed.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 205 50% Plant Management Systems
- 402 35% Engineering Systems and Equipment
- 404 15% Instrumentation and Control Systems

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Agriculture is a large user and potential producer of energy. Since the 1970's, agriculture has made progress in reducing energy use and supporting industries that have the potential to produce energy from agricultural products, but more progress is needed. Technologies to reduce fertilizer nitrogen use and fuel consumption increase the viability of developing bioenergy from grains, oilseeds, root crops and forage crops. Basic assumptions regarding the need to apply fertilizers and the rates to apply have been called into question with increasing energy costs, and with the possible change in the components of certain crops that might be removed from fields.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Cost of N and pesticides will continue to remain at historic highs or increase.
Fossil fuel prices will continue to remain at historic highs or increase.
Present crops will be grown, but some oilseeds and corn will be converted to alternative fuels.
Some crops not currently grown will be explored for their value as fuel.
Crops normally grown for grain will be examined for their whole-plant suitability for fuel stock.

2. Ultimate goal(s) of this Program

Fuel use minimized (including energy background of inputs), and reduced at least 25%.
Alternative fuel use increases.
Production of alternative fuels increases and energy-producing crops increase in production state-wide.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	10.0	0.0	0.0	0.0
2009	10.0	0.0	0.0	0.0
2010	10.0	0.0	0.0	0.0
2011	10.0	0.0	0.0	0.0
2012	10.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Develop presentation materials and develop resource materials
- Develop and plan workshops, demonstrations and meetings
- Transcribe scientific research into useable resources
- Continuing education demonstrations - fuel use, tillage and N use
- Cooperate with NDSU Research Extension Centers - conduct rate N calibrations and tillage fuel use studies

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Workshop ● Education Class ● Demonstrations 	<ul style="list-style-type: none"> ● Web sites ● Newsletters ● TV Media Programs

3. Description of targeted audience

- Extension staff
- Crop consultants
- Agricultural industry personnel
- Agricultural finance people
- Government workers
- Growers

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	1000	4500	0	0
2009	2500	6000	0	0
2010	3000	8000	0	0
2011	3000	10000	0	0
2012	3000	10000	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	0	0
2009	0	0
2010	0	0
2011	0	0
2012	0	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Number of farmers gaining knowledge on new tillage options

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :250 2009 : 500 2010 : 500 2011 :1000 2012 : 1000

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 402 - Engineering Systems and Equipment
- 404 - Instrumentation and Control Systems

1. Outcome Target

Number of farmers gaining knowledge of energy alternatives

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :500 **2009 :** 750 **2010 :** 1000 **2011 :**2500 **2012 :** 3000

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 402 - Engineering Systems and Equipment

1. Outcome Target

Number of farmers gaining knowledge of energy potential and availability of different crops

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :500 **2009 :** 750 **2010 :** 1000 **2011 :**2500 **2012 :** 3000

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems

1. Outcome Target

Number of farmers that changed their tillage habits to no-till

2. Outcome Type : Change in Action Outcome Measure

2008 :300 **2009 :** 500 **2010 :** 1000 **2011 :**1500 **2012 :** 2000

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 402 - Engineering Systems and Equipment
- 404 - Instrumentation and Control Systems

1. Outcome Target

Number of farmers that make greater use of soil testing for fertilizer needs

2. Outcome Type : Change in Action Outcome Measure

2008 :750 **2009 :** 1500 **2010 :** 3500 **2011 :**5000 **2012 :** 6500

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems

1. Outcome Target

Number of acres under reduced tillage

2. Outcome Type : Change in Action Outcome Measure

2008 :7000000 **2009 :** 10000000 **2010 :** 15000000 **2011 :**15000000 **2012 :** 15000000

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 402 - Engineering Systems and Equipment
- 404 - Instrumentation and Control Systems

1. Outcome Target

Number of farmers using reduced energy technologies

2. Outcome Type : Change in Action Outcome Measure

2008 :500

2009 : 750

2010 : 1500

2011 :3000

2012 : 4500

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 402 - Engineering Systems and Equipment
- 404 - Instrumentation and Control Systems

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Government Regulations
- Public Policy changes
- Appropriations changes

Description

Drought/excessive water may limit biofuel feedstock production.

Poor economy may limit public's willingness to pay extra for some biofuels or invest in biofuel production.

World oil supplies may increase or decrease.

Alternative energy sources such as ethanol and biodiesel must be available in good supply.

Government programs to assist in economic promotion of alternative energy sources.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Retrospective (post program)
- During (during program)

Description

Changed practices in tillage and N fertility management on farms and ranches in North Dakota.

By conducting a survey of changed acres to reduced- and zero-till farm lands, and the changes in cropping systems and rotations in North Dakota over the next five years.

2. Data Collection Methods

- On-Site

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Family Meals

2. Brief summary about Planned Program

Family meals are one of the most common social opportunities for individuals to build family connections, learn healthy nutrition and develop practical skills. Over a third of families eat less than three meals together a week; child and adult obesity is increasing; and family relationships are at risk.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 802 100% Human Development and Family Well-Being

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Family meals are one of the most common social opportunities for individuals to build family connections, learn healthy nutrition, and develop practical skills. Over a third of families eat less than three meals together a week; child and adult obesity is increasing; and family relationships are at risk. Critical areas related to family meals include family identity, transmission of values, family connections, family time, monitoring children's behavior, protective elements related to risk issues, healthy nutrition habits and overall diet quality.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Families will continue to struggle balancing family meal time with other scheduling commitments.

2. Ultimate goal(s) of this Program

1. Improving the quality of family relationships and the overall well-being of children and adolescents through meaningful family nutrition. 2. Improving dietary quality for family members. 3. Enhanced public awareness of the value and importance of family meals.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	3.0	0.0	0.0	0.0
2009	3.0	0.0	0.0	0.0
2010	3.0	0.0	0.0	0.0
2011	3.0	0.0	0.0	0.0
2012	3.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Develop newsletter resources on family meals
 Develop presentation and resource materials
 Provide training through presentations and workshops
 Identify key and emerging issues
 Evaluate effectiveness of activities

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Group Discussion ● Education Class ● Workshop 	<ul style="list-style-type: none"> ● Newsletters ● Public Service Announcement ● Web sites

3. Description of targeted audience

Parents and family caregivers
 4-H youth and other youth
 Child care programs, caregivers
 School system personnel
 Government agency personnel

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	1500	3500	800	1500
2009	1600	5000	1000	2000
2010	2500	7500	1400	2500
2011	3000	10000	1800	3000
2012	3500	12500	2200	3500

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 : 0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	0	0
2009	0	0
2010	0	0
2011	0	0
2012	0	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Percent of participating individuals demonstrating increase in subject knowledge and skills

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :65 2009 : 70 2010 : 75 2011 :75 2012 : 75

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

1. Outcome Target

Percent of individuals implementing recommended actions or practices

2. Outcome Type : Change in Action Outcome Measure

2008 :50 2009 : 60 2010 : 60 2011 :70 2012 : 70

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

1. Outcome Target

Percent of individuals indicating a change in frequency of family meals

2. Outcome Type : Change in Action Outcome Measure

2008 :50 2009 : 60 2010 : 60 2011 :70 2012 : 70

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

1. Outcome Target

Percent of individuals indicating a change in other quality indicators of the family meal experience

2. Outcome Type : Change in Action Outcome Measure

2008 :50 2009 : 60 2010 : 60 2011 :70 2012 : 70

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

1. Outcome Target

Percent of individuals showing an improvement in measures of family connection and well-being

2. Outcome Type : Change in Condition Outcome Measure

2008 :0 2009 : 40 2010 : 50 2011 :50 2012 : 50

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

1. Outcome Target

Percent of individuals showing an improvement in family nutritional wellness

2. Outcome Type : Change in Condition Outcome Measure

2008 :0 2009 : 40 2010 : 50 2011 :50 2012 : 50

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

1. Outcome Target

Number of individuals receiving information through materials or training

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :7500 2009 : 10000 2010 : 14000 2011 :18000 2012 : 22000

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Populations changes (immigration,new cultural groupings,etc.)
- Economy

Description

Limits on family time and overscheduling; availability of "fast food" alternatives; consumer-oriented lifestyles; lack of knowledge and skills regarding family meals; community awareness.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Retrospective (post program)
- During (during program)

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Whole population
- On-Site

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Financial Security for All

2. Brief summary about Planned Program

Many Americans and, more specifically, North Dakotans, are in great danger of not being financially stable and secure throughout their lifetimes. Because most people did not receive formal financial education in their youth, they need lifelong learning opportunities to help them improve their financial management skills. Increasing financial literacy throughout the life cycle is essential to avoid threats to financial security.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 801 100% Individual and Family Resource Management

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Many Americans and, more specifically, North Dakotans, are in great danger of not being financially stable and secure throughout their lifetimes. Because most people did not receive formal financial education in their youth, they need lifelong learning opportunities to help them improve their financial management skills. Increasing financial literacy throughout the life cycle is essential to avoid threats to financial security.

Programs in this area are designed to increase the number of people who are financially literate and empowered with the knowledge, attitudes, skills, and confidence to practice effective and successful financial management strategies that insure financial security and stability across the life cycle. Education programs encourage families to adopt financial practices that will increase financial security and stability, and help them cope with financial impacts of periods of reduced income due to plant downsizing and military base closings, as well as from divorce, widowhood and natural disasters. A majority of the effort to provide these programs will be through eXtension, an online, interactive, virtual environment.

2. Scope of the Program

- In-State Extension
- Multistate Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

North Dakota economy remains relatively stable
Homeland security maintained
North Dakotans can earn a living wage
People will be motivated to learn
Knowledge change leads to behavior change
Behavior change leads to condition change
Funding will be secure throughout the course of the project

2. Ultimate goal(s) of this Program

Increased financial security
Decrease risk factors for financial problems
Reduce anxiety related to financial problems
Increased savings
Decreased debt

Decreased bankruptcy rate
 Communities have improved financial stability

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	3.0	0.0	0.0	0.0
2009	3.0	0.0	0.0	0.0
2010	3.0	0.0	0.0	0.0
2011	3.0	0.0	0.0	0.0
2012	3.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Promote Interactive learning modules
 Packaged programs
 NDSU Extension Service Family Economics Web site
 Media work
 Collaborative projects

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Workshop ● Group Discussion ● Education Class 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● TV Media Programs

3. Description of targeted audience

Extension educators
 Specialists
 General public
 Targeted audiences - Baby Boomers, women, couples, farm/ranch
 Families - older adults
 Collaborators
 Youth
 Financially vulnerable

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	2600	120000	2000	8500
2009	2600	140000	2000	9000
2010	2600	160000	2000	9500
2011	2700	180000	2000	10000
2012	2700	180000	2000	10000

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	1	2
2009	1	2
2010	1	2
2011	1	2
2012	1	2

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Number of educational programs and activities conducted

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :200 2009 : 200 2010 : 200 2011 :200 2012 : 200

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of people completing educational programs

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :2000 2009 : 2500 2010 : 2500 2011 :2500 2012 : 2500

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of people reporting increased knowledge from the number completing educational programs

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1800 **2009 :** 2000 **2010 :** 2000 **2011 :**2250 **2012 :** 2250

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of people who plan to adopt practices from the number of people who increased knowledge

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1500 **2009 :** 1600 **2010 :** 1600 **2011 :**2000 **2012 :** 2000

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of people adopting practices from the number of people who increased knowledge

2. Outcome Type : Change in Action Outcome Measure

2008 :500 **2009 :** 600 **2010 :** 600 **2011 :**800 **2012 :** 800

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of people receiving information through non-program contacts such as telephone, office and farm visits

2. Outcome Type : Change in Action Outcome Measure

2008 :1200 **2009 :** 1200 **2010 :** 1200 **2011 :**1200 **2012 :** 1200

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of people who engage in activities that increase their financial literacy related to later life issues

2. Outcome Type : Change in Action Outcome Measure

2008 :2200 **2009 :** 2400 **2010 :** 2600 **2011 :**2800 **2012 :** 2800

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of people who initiate or increase contributions to a savings plan for retirement or future income needs or participate in America Saves program

2. Outcome Type : Change in Action Outcome Measure

2008 :500 **2009 :** 600 **2010 :** 700 **2011 :**800 **2012 :** 800

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of people who participate in the Legally Secure Your Financial Future program

2. Outcome Type : Change in Action Outcome Measure

2008 :75 2009 : 100 2010 : 150 2011 :250 2012 : 250

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of people who participate in the Investing for Your Future program

2. Outcome Type : Change in Action Outcome Measure

2008 :20 2009 : 30 2010 : 40 2011 :50 2012 : 50

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of people who participate in programs to cope with financial impacts of reduced income

2. Outcome Type : Change in Action Outcome Measure

2008 :400 2009 : 500 2010 : 600 2011 :700 2012 : 700

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of participants reporting reduced anxiety related to financial problems

2. Outcome Type : Change in Condition Outcome Measure

2008 :600 2009 : 700 2010 : 800 2011 :900 2012 : 900

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of participants reporting increased savings

2. Outcome Type : Change in Condition Outcome Measure

2008 :1200 2009 : 1400 2010 : 1600 2011 :1800 2012 : 1800

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Amount of increased savings

2. Outcome Type : Change in Condition Outcome Measure

2008 :236000 2009 : 248000 2010 : 360000 2011 :375000 2012 : 375000

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Number of participants reporting decreased debt

2. Outcome Type : Change in Condition Outcome Measure

2008 :600 2009 : 700 2010 : 800 2011 :900 2012 : 1000

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Amount of decreased debt

2. Outcome Type : Change in Condition Outcome Measure

2008 :20000 2009 : 30000 2010 : 40000 2011 :50000 2012 : 50000

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Decreased numbers of personal bankruptcy filings in state of North Dakota

2. Outcome Type : Change in Condition Outcome Measure

2008 :60 2009 : 70 2010 : 80 2011 :90 2012 : 100

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Appropriations changes
- Competing Public priorities

Description

Institutional commitment
Changing priorities
Economic conditions
Cooperation with partners

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Comparisons between program participants (individuals,group,organizations) and non-participants
- During (during program)
- Retrospective (post program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

Description

Program participant surveys, selected followups.

2. Data Collection Methods

- On-Site
- Other (computer)

Description

Participants in programs will be surveyed using a post then pre method. Online data collection methods will be used when feasible.

V(A). Planned Program (Summary)

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

Food safety from farm to table remains an issue of concern in the U.S. Over 5,000 deaths and 76 million cases of foodborne illness occur annually. About half the food dollar is spend on foods away from home, and more people are involved in the handling of foods.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 504 75% Home and Commercial Food Service
- 712 25% Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Food safety from farm to table remains an issue of concern in the U.S. Over 5,000 deaths and 76 million cases of foodborne illness occur annually. About half the food dollar is spend on foods away from home, and more people are involved in the handling of foods. Priorities are safe food handling in the home and in the foodservice/processing sectors.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Food safety will remain an issue of concern in the U.S.

2. Ultimate goal(s) of this Program

Foodborne illness outbreaks will decrease. Food companies will decrease recalls. Food businesses will change policies and implement HACCP.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	7.0	0.0	0.0	0.0
2009	7.0	0.0	0.0	0.0
2010	7.0	0.0	0.0	0.0
2011	7.0	0.0	0.0	0.0
2012	7.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Implement programs for children and adults based on Fight BAC, Thermy, Produce Safety and BAC Down campaigns; USDA food preservation rules; and implement food safety programs for foodservice and processors (ServSafe, TAPS, HACCP).

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Demonstrations ● Workshop ● Education Class ● Group Discussion 	<ul style="list-style-type: none"> ● Web sites ● Public Service Announcement ● TV Media Programs ● Newsletters

3. Description of targeted audience

Children in school and youth program settings Teen food handlers in high school and community Adults in home settings Volunteer food handlers in community settings Professionals in foodservice and food processing environments

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	5200	410000	5200	22000
2009	5400	420000	5400	24000
2010	5600	430000	5600	26000
2011	5800	440000	5800	28000
2012	6000	450000	6000	30000

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	0	0
2009	0	0
2010	0	0
2011	0	0
2012	0	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Based on post-surveys, 75 percent of children participating in handwashing classes will report intentions to wash hands properly

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :2200 2009 : 2300 2010 : 2400 2011 :2500 2012 : 2600

3. Associated Knowledge Area(s)

- 504 - Home and Commercial Food Service

1. Outcome Target

Based on post-surveys, 50 percent of teens will report changes in food handling practices to reduce risk of foodborne illness outbreaks

2. Outcome Type : Change in Action Outcome Measure

2008 :1600 2009 : 1700 2010 : 1800 2011 :1900 2012 : 2000

3. Associated Knowledge Area(s)

- 504 - Home and Commercial Food Service
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

1. Outcome Target

Seventy-five percent of foodservice and food industry participants in ServSafe, HACCP or other food sanitation courses will pass the examination.

2. Outcome Type : Change in Action Outcome Measure

2008 :85 2009 : 95 2010 : 100 2011 :110 2012 : 120

3. Associated Knowledge Area(s)

- 504 - Home and Commercial Food Service

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

1. Outcome Target

Based on post-surveys, 50 percent of adult participants in consumer food safety classes will report intent to change one or more food handling behaviors.

2. Outcome Type : Change in Condition Outcome Measure

2008 :2200 2009 : 2300 2010 : 2400 2011 :2500 2012 : 2600

3. Associated Knowledge Area(s)

- 504 - Home and Commercial Food Service
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Public Policy changes
- Appropriations changes
- Competing Public priorities
- Government Regulations

Description

{NO DATA ENTERED}

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Retrospective (post program)
- During (during program)

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Tests
- On-Site
- Sampling

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Fusarium head blight of wheat

2. Brief summary about Planned Program

Fusarium head blight is a disease of wheat that has cost the North Dakota economy in excess of \$4 billion in losses since 1993. The disease reduces yield of wheat and reduces quality by lowering market grade and introducing toxins that are harmful to animals and humans.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 212 100% Pathogens and Nematodes Affecting Plants

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Fusarium head blight is a disease of wheat that has cost the North Dakota economy in excess of \$4 billion in losses since 1993. The disease reduces yield of wheat and reduces quality by lowering market grade and introducing toxins that are harmful to animals and humans. Areas of concern include evaluating performance of released varieties; identifying, improving and communicating disease-management strategies; and reporting outbreaks.

2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Funding will remain available to do this research. Wheat will continue to one of the important crops in North Dakota.

2. Ultimate goal(s) of this Program

Adding value to our wheat crop by decreasing yield and quality losses
Enhance public perception of food quality

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	3.0	0.0	2.0	0.0
2009	3.0	0.0	2.0	0.0
2010	3.0	0.0	2.0	0.0
2011	3.0	0.0	2.0	0.0
2012	3.0	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research on fungicidal- and bio-control and application technology
 Field surveys on disease severity and losses to disease
 Develop resource material
 Provide presentations and workshops
 Translate scientific materials into lay materials

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Workshop ● Group Discussion ● Education Class 	<ul style="list-style-type: none"> ● Newsletters ● Web sites

3. Description of targeted audience

Wheat producers
 Crop consultants and ag advisors
 Research Extension Centers
 Extension personnel
 Agribusiness and agrifinance personnel
 Government agency personnel

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	1000	2000	0	0
2009	1500	3000	0	0
2010	2000	4000	0	0
2011	2500	5000	0	0
2012	2500	5000	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	1	0
2009	2	0
2010	1	0
2011	2	0
2012	2	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Percent of acres planted to resistant varieties

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :45 2009 : 50 2010 : 55 2011 :60 2012 : 65

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Percent of acres treated with fungicides

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :16 2009 : 15 2010 : 14 2011 :12 2012 : 10

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Economic losses to disease (\$)

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :130000000 **2009 :** 120000000 **2010 :** 100000000 **2011 :**80000000 **2012 :** 60000000

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Number of individuals demonstrating increased knowledge and skills

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :12000 **2009 :** 14000 **2010 :** 17000 **2011 :**20000 **2012 :** 22000

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Number of individuals implementing recommended action or practice

2. Outcome Type : Change in Action Outcome Measure

2008 :12000 **2009 :** 14000 **2010 :** 17000 **2011 :**20000 **2012 :** 20000

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Economic losses to Fusarium head blight (\$)

2. Outcome Type : Change in Action Outcome Measure

2008 :130000000 **2009 :** 120000000 **2010 :** 100000000 **2011 :**80000000 **2012 :** 80000000

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Estimated dollar value of adopted best management practices (\$)

2. Outcome Type : Change in Condition Outcome Measure

2008 :600000000 **2009 :** 700000000 **2010 :** 850000000 **2011 :**1000000000 **2012 :** 1000000000

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Stable export market unaffected by quality issues (\$)

2. Outcome Type : Change in Condition Outcome Measure

2008 :520000000 **2009 :** 540000000 **2010 :** 565000000 **2011 :**600000000 **2012 :** 600000000

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Government Regulations
- Economy
- Appropriations changes
- Natural Disasters (drought,weather extremes,etc.)

Description

Decrease funding, changing priorities; producer attitudes toward varieties; weather favorable for disease; economic conditions; coordination and cooperation with government entities

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)
- Retrospective (post program)

Description

{NO DATA ENTERED}

2. Data Collection Methods

- On-Site

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Healthy Patterns of Eating & Physical Activity

2. Brief summary about Planned Program

Changes in food intake and physical activity patterns in North Dakota have increased the prevalence of overweight and obesity and the risk for chronic diseases such as heart disease, type 2 diabetes and cancer.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 703 70% Nutrition Education and Behavior
- 724 10% Healthy Lifestyle
- 806 20% Youth Development

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Changes in food intake and physical activity patterns in North Dakota have increased the prevalence of overweight and obesity and the risk for chronic diseases such as heart disease, type 2 diabetes and cancer. Priorities are promoting the development/maintenance of healthy lifestyles for individuals/families within homes, worksites and communities.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Overweight and obesity plus physical inactivity will continue to be a problem in North Dakota. Chronic disease (heart disease, type 2 diabetes and certain types of cancer) related to overweight and obesity will continue to be a problem in North Dakota.

2. Ultimate goal(s) of this Program

Increase in healthy body weights Reduction in risk factors for development of chronic diseases Reduction in chronic diseases

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	8.0	0.0	0.0	0.0
2009	8.0	0.0	0.0	0.0
2010	8.0	0.0	0.0	0.0
2011	8.0	0.0	0.0	0.0
2012	8.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Identify emerging issues Translate scientific data Develop lessons and curricula Develop public campaigns Promote changes in public policy Train extension agents Develop evaluation methodology Analyze/report impacts

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Group Discussion ● Education Class ● Demonstrations ● Workshop 	<ul style="list-style-type: none"> ● Public Service Announcement ● Billboards ● Web sites ● Newsletters

3. Description of targeted audience

Youth - schools, afterschool, 4-H Adults - homes, worksites, communities, people with chronic disease

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	7200	410000	6200	22000
2009	7400	420000	6400	24000
2010	7600	430000	6600	26000
2011	7800	440000	6800	28000
2012	8000	450000	7000	30000

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	1	3
2009	1	3
2010	1	3
2011	1	3
2012	1	3

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Based on follow-up surveys of adult participants in walking programs, 50 percent will report increased number of steps or minutes of walking

2. Outcome Type : Change in Action Outcome Measure

2008 :1200 2009 : 1400 2010 : 1600 2011 :1800 2012 : 2000

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 806 - Youth Development

1. Outcome Target

Based on follow-up surveys of adult participants in nutrition education programs, 25percent will report a change in behavior to be more consistent with current nutrition recommendations based on MyPyramid

2. Outcome Type : Change in Action Outcome Measure

2008 :3200 2009 : 3400 2010 : 3600 2011 :3800 2012 : 4000

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

1. Outcome Target

Based on follow-up surveys of parents of children participating in nutrition education programs, 25 percent of parents will report a family behavior change to be consistent with current recommendations

2. Outcome Type : Change in Action Outcome Measure

2008 :2200 2009 : 2400 2010 : 2600 2011 :2800 2012 : 3000

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 806 - Youth Development

1. Outcome Target

Based on post-surveys of children involved in multi-session nutrition/fitness classes, 25 percent of participants will report a change in nutrition or fitness behavior to be consistent with current MyPyramid recommendations

2. Outcome Type : Change in Action Outcome Measure

2008 :3600 **2009 :** 3700 **2010 :** 3800 **2011 :**3900 **2012 :** 4000

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 806 - Youth Development

1. Outcome Target

Based on pre- and post- surveys of adults involved in a multisession diabetes education, 25 percent of participants will demonstrate an improved ability to read and interpret nutrition labels.

2. Outcome Type : Change in Action Outcome Measure

2008 :35 **2009 :** 35 **2010 :** 35 **2011 :**35 **2012 :** 35

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

1. Outcome Target

Based on pre- and post- surveys of adults involved in a multisession diabetes education, 25 percent of participants will report an increased time/intensity physical activity each week.

2. Outcome Type : Change in Action Outcome Measure

2008 :35 **2009 :** 35 **2010 :** 35 **2011 :**35 **2012 :** 35

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

1. Outcome Target

Based on pre- and post- surveys of adults involved in a multisession diabetes education, 25 percent of participants will demonstrate an increased knowledge of recommended levels of lab values (hemoglobin A, C, blood pressure, LDL-cholesterol).

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :35 **2009 :** 35 **2010 :** 35 **2011 :**35 **2012 :** 35

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Competing Public priorities
- Public Policy changes
- Economy
- Government Regulations

Description

Funding priorities; economic impacts such as cost of health care; societal attitudes; policy changes; coordination and cooperation with government agencies.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Before-After (before and after program)
- Comparison between locales where the program operates and sites without program intervention
- Retrospective (post program)
- Comparisons between program participants (individuals,group,organizations) and non-participants

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Telephone
- On-Site
- Whole population
- Sampling

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Insect Management

2. Brief summary about Planned Program

Understanding the ecology and behavior of arthropod populations to mitigate harmful impacts and to preserve ecosystem health.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 211 55% Insects, Mites, and Other Arthropods Affecting Plants
- 216 40% Integrated Pest Management Systems
- 721 5% Insects and Other Pests Affecting Humans

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Understanding the ecology and behavior of arthropod populations to mitigate harmful impacts and to preserve ecosystem health. Priorities are protecting our urban, agricultural and natural ecosystems from native and introduced insects and insect outbreaks, and developing effective and economical integrated pest management practices that are adaptive and meet social and regulatory constraints.

2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Funding will remain available to support this program. Pests will remain an issue in agriculture, tress, scrubs, and for homeowners.

2. Ultimate goal(s) of this Program

Increase agriculture profitability by decreasing costs and improving pest management efficacy
Decrease health and environmental risk from insect management
Enhanced insect diagnostic capacity

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	2.0	0.0	5.0	0.0
2009	2.0	0.0	5.0	0.0
2010	2.0	0.0	5.0	0.0
2011	2.0	0.0	5.0	0.0
2012	2.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Assess emerging pest issues
- Provide insect diagnostics
- Provide bio-based pest management systems
- Meet social and regulatory needs
- Evaluate activity effectiveness

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Workshop 	<ul style="list-style-type: none"> ● TV Media Programs ● Web sites ● Newsletters ● Public Service Announcement

3. Description of targeted audience

- Crop and animal agricultural producers
- Home owners
- Agribusiness
- Government and NGO agency personnel
- Medical professionals
- Crop consultants

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	3000	10000	0	0
2009	3000	10000	0	0
2010	3000	10000	0	0
2011	3000	10000	0	0
2012	3000	10000	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	12	4
2009	12	4
2010	12	4
2011	12	4
2012	12	4

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Pest alerts disseminated through various channels

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :100 2009 : 100 2010 : 100 2011 :100 2012 : 100

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems
- 721 - Insects and Other Pests Affecting Humans

1. Outcome Target

Best pest management guides based on currently available research knowledge

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :12 2009 : 12 2010 : 12 2011 :12 2012 : 12

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Relevant research and extension programs initiated

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1 2009 : 1 2010 : 1 2011 :1 2012 : 1

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems
- 721 - Insects and Other Pests Affecting Humans

1. Outcome Target

Conduct diagnostic insect identification review session with Plant Diagnostics Lab

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :2 2009 : 2 2010 : 2 2011 :2 2012 : 2

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems
- 721 - Insects and Other Pests Affecting Humans

1. Outcome Target

Output materials made available to users

2. Outcome Type : Change in Action Outcome Measure

2008 :16 2009 : 16 2010 : 16 2011 :16 2012 : 16

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems
- 721 - Insects and Other Pests Affecting Humans

1. Outcome Target

Assess grower acceptance of new technologies

2. Outcome Type : Change in Action Outcome Measure

2008 :1 2009 : 1 2010 : 1 2011 :1 2012 : 1

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Insect diagnostics and reporting integrated with Plant Diagnostics Lab and others

2. Outcome Type : Change in Action Outcome Measure

2008 :14000 **2009 :** 14000 **2010 :** 14000 **2011 :**14000 **2012 :** 14000

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems
- 721 - Insects and Other Pests Affecting Humans

1. Outcome Target

Pest management technologies that meet social and regulatory constraints

2. Outcome Type : Change in Condition Outcome Measure

2008 :1 **2009 :** 1 **2010 :** 1 **2011 :** 1 **2012 :** 1

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems
- 721 - Insects and Other Pests Affecting Humans

1. Outcome Target

Valuation of best pest management practices

2. Outcome Type : Change in Condition Outcome Measure

2008 :2 **2009 :** 2 **2010 :** 2 **2011 :**2 **2012 :** 2

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Estimation of adoption rate of best pest management practices

2. Outcome Type : Change in Condition Outcome Measure

2008 :1 **2009 :** 1 **2010 :** 1 **2011 :** 1 **2012 :** 1

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Insect diagnostic capacity meeting national needs

2. Outcome Type : Change in Condition Outcome Measure

2008 :1 **2009 :** 1 **2010 :** 1 **2011 :** 1 **2012 :** 1

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems

- 721 - Insects and Other Pests Affecting Humans

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Government Regulations
- Appropriations changes
- Economy
- Public Policy changes

Description

Decreased funding and personnel, social and regulatory constraints to pest management practices, economic conditions, invasive species, climate and farming practice changes.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- During (during program)
- Before-After (before and after program)
- Retrospective (post program)

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Mail
- On-Site
- Tests
- Sampling
- Other (Research trials)
- Journals
- Observation

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Livestock Waste Management

2. Brief summary about Planned Program

Protecting our nation's water supply through education, research and water quality monitoring within watersheds containing livestock feedlots and grazing lands.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 112 25% Watershed Protection and Management
- 133 25% Pollution Prevention and Mitigation
- 403 50% Waste Disposal, Recycling, and Reuse

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Protecting our nation's water supply through education, research and water quality monitoring within watersheds containing livestock feedlots and grazing lands. Areas of concern include watersheds (nutrients effecting water quality), ecosystems (elements affecting wetland, stream, and riverine function), manure nutrient utilization, animal husbandry and emerging issues.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Protecting our nation's water supply will remain a top priority. Animal production will remain a significant part of North Dakota agriculture.

2. Ultimate goal(s) of this Program

Livestock producers will implement nutrient management practices that protect water resources, more efficiently utilize manure nutrients and successfully operate and maintain livestock manure management systems.

Enhanced water quality in North Dakota

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	5.0	0.0	0.0	0.0
2009	5.0	0.0	0.0	0.0
2010	5.0	0.0	0.0	0.0
2011	5.0	0.0	0.0	0.0
2012	5.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Develop presentation materials
- Develop resource material
- Provide presentations and workshops
- Translate scientific materials into lay materials
- Identify emerging issues
- Evaluate effectiveness of activities

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● One-on-One Intervention ● Demonstrations ● Group Discussion ● Education Class ● Workshop 	<ul style="list-style-type: none"> ● Other 1 (News Releases) ● Newsletters ● Web sites

3. Description of targeted audience

- Owners, managers and employees of animal operations
- Agribusiness and agrifinance personnel
- Government agency personnel

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	200	200	0	0
2009	200	200	0	0
2010	200	200	0	0
2011	200	200	0	0
2012	200	200	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	0	2
2009	0	2
2010	0	2
2011	0	2
2012	0	2

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Number of individuals requesting information

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :50 2009 : 75 2010 : 100 2011 :100 2012 : 100

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management

1. Outcome Target

Number of individuals demonstrating increase in subject knowledge and skills

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :100 2009 : 100 2010 : 100 2011 :100 2012 : 100

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management

1. Outcome Target

Number of individuals implementing recommended action or practice

2. Outcome Type : Change in Action Outcome Measure

2008 :30 2009 : 50 2010 : 70 2011 :70 2012 : 70

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse

1. Outcome Target

Number of individuals requesting assistance

2. Outcome Type : Change in Action Outcome Measure

2008 :50 2009 : 50 2010 : 70 2011 :70 2012 : 70

3. Associated Knowledge Area(s)

- 133 - Pollution Prevention and Mitigation

1. Outcome Target

Number of nutrient management plans written and people trained

2. Outcome Type : Change in Action Outcome Measure

2008 :30 2009 : 50 2010 : 50 2011 :50 2012 : 50

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse

1. Outcome Target

Estimated dollar value of adopted best management practices

2. Outcome Type : Change in Condition Outcome Measure

2008 :75000 2009 : 125000 2010 : 125000 2011 :125000 2012 : 125000

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse

1. Outcome Target

Number of nutrient management plans implemented

2. Outcome Type : Change in Condition Outcome Measure

2008 :30 2009 : 50 2010 : 50 2011 :50 2012 : 50

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse

1. Outcome Target

Surface water quality monitoring data collected in watersheds before and after bmp implementation

2. Outcome Type : Change in Condition Outcome Measure

2008 :2 2009 : 5 2010 : 5 2011 :5 2012 : 5

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Government Regulations
- Public Policy changes
- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Economy

Description

Decrease funding, changing priorities; farmer/rancher attitudes; natural disasters; economic conditions; changing regulatory climate, coordination and cooperation with government entities.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Retrospective (post program)
- Case Study
- After Only (post program)
- During (during program)

Description

Evaluation tools will be utilized post-session at educational events and will be developed and mailed to target audience to determine effectiveness of whole program. On-site case studies will be conducted to evaluate adoption and effectiveness of recommended practices.

2. Data Collection Methods

- On-Site
- Case Study
- Mail
- Whole population
- Observation

Description

Whole population mail surveys are an accepted method to evaluate long term effectiveness of a program. Case studies are a successful method of monitoring behavior and delineating quantitative results of practice adoption.

V(A). Planned Program (Summary)

1. Name of the Planned Program

Noxious and Invasive Weed Management

2. Brief summary about Planned Program

Rangeland and pasture comprise about 42 percent of the land area of the United States, with three-quarters of all domestic livestock depending upon these lands for survival. Today, more than 300 rangeland weeds are found in the United States. In total, noxious and invasive weeds in rangeland cause an estimated loss of \$2 billion annually (which is more than all other pests combined). Primary impacts are to the livestock industry, wildlife habitat, and soil and plant community health.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 213 20% Weeds Affecting Plants
- 215 40% Biological Control of Pests Affecting Plants
- 216 40% Integrated Pest Management Systems

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Rangeland and pasture comprise about 42 percent of the land area of the United States, with three-quarters of all domestic livestock depending upon these lands for survival. Today, more than 300 rangeland weeds are found in the United States. In total, noxious and invasive weeds in rangeland cause an estimated loss of \$2 billion annually (which is more than all other pests combined). Primary impacts are to the livestock industry, wildlife habitat, and soil and plant community health. Rangeland weed populations increase an average 4 percent annually in the United States, indicating a need to provide education opportunities and awareness of the problem and techniques to control weed invasion. Priorities are to develop integrated pest management workshops, demonstration projects and research trials to teach land managers (both private and public) best management practices to minimize weed invasion and control known populations.

2. Scope of the Program

- Integrated Research and Extension
- Multistate Extension
- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Noxious and invasive weeds will continue to be a problem in rangeland both in North Dakota and across the United States. Damage will affect both private and public lands.

2. Ultimate goal(s) of this Program

Improved profitability and productivity of North Dakota livestock operations
Improved rangeland productivity and health through improved management

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	4.0	0.0	0.0	0.0
2009	4.0	0.0	0.0	0.0
2010	4.0	0.0	0.0	0.0
2011	4.0	0.0	0.0	0.0
2012	4.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Develop presentation materials
- Develop resource material
- Provide workshops and field tours
- Translate scientific materials into lay materials
- Develop demonstration and research trials
- Evaluate effectiveness of activities

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Demonstrations ● Workshop 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● Other 1 (Handbooks)

3. Description of targeted audience

- Private land managers, including livestock producers
- Public land managers
- 4-H youth
- Government agency personnel
- Conservation groups

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	300	10000	100	500
2009	400	10000	125	600
2010	450	5000	125	600
2011	500	12000	125	700
2012	500	12000	150	750

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	1	0
2009	0	1
2010	1	0
2011	1	1
2012	0	1

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Number of individuals receiving training and education

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :250 2009 : 300 2010 : 350 2011 :400 2012 : 450

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Number of individuals demonstrating increase in subject knowledge and skills

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :100 2009 : 150 2010 : 150 2011 :200 2012 : 200

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Number of producers implementing recommended actions or practices

2. Outcome Type : Change in Action Outcome Measure

2008 :25 2009 : 30 2010 : 35 2011 :50 2012 : 50

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Number of producers participating in government cost share programs for range conservation

2. Outcome Type : Change in Action Outcome Measure

2008 :55 2009 : 60 2010 : 65 2011 :70 2012 : 75

3. Associated Knowledge Area(s)

- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Estimated cost savings and return for North Dakota landowners implementing an integrated pest management program (\$/acre)

2. Outcome Type : Change in Condition Outcome Measure

2008 :7 2009 : 10 2010 : 11 2011 :12 2012 : 15

3. Associated Knowledge Area(s)

- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Reduce number of noxious weed acres by two to five percent annually in North Dakota

2. Outcome Type : Change in Condition Outcome Measure

2008 :3 2009 : 5 2010 : 7 2011 :10 2012 : 10

3. Associated Knowledge Area(s)

- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Government Regulations
- Competing Public priorities
- Economy
- Public Policy changes
- Natural Disasters (drought,weather extremes,etc.)

Description

Land manager attitudes and economic parameters; environmental conditions; changing priorities of government agencies and policy makers.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

Description

{NO DATA ENTERED}

2. Data Collection Methods

- On-Site
- Sampling

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Nutrition of Grazing Livestock

2. Brief summary about Planned Program

Feed costs associated with maintaining beef cows average 66 percent of total cash costs of production. Proper nutrition of the cow herd and cost effective use of dollars spent on purchased feed inputs is critical to the success of livestock operations. Over 44 percent of North Dakota's land use is associated with rangeland, pasture land, and hay land.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 121 50% Management of Range Resources
- 302 50% Nutrient Utilization in Animals

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Feed costs associated with maintaining beef cows average 66 percent of total cash costs of production. Proper nutrition of the cow herd and cost effective use of dollars spent on purchased feed inputs is critical to the success of livestock operations. Over 44 percent of North Dakota's land use is associated with rangeland, pasture land, and hay land. Pasture costs (purchase and rental) continue to increase. Proper nutrient management of grazed forages, implementation of an efficient grazing system (including timing of grazing), and stored winter forages along with supplemental feeds, can play a vital role in profitability of cow-calf producers in North Dakota.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Cattle will continue to be a large part of the agricultural industry in North Dakota. Pastures will continue to be one of the economical ways to meet the nutritional needs of cattle.

2. Ultimate goal(s) of this Program

Improved profitability and productivity of North Dakota livestock operations
Improved rangeland productivity and health through improved management

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	6.0	0.0	0.0	0.0
2009	6.0	0.0	0.0	0.0
2010	6.0	0.0	0.0	0.0
2011	6.0	0.0	0.0	0.0
2012	6.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Develop presentation materials
- Develop resource material
- Provide presentations and workshops
- Translate scientific and technical materials into lay materials
- Identify emerging issues
- Evaluate effectiveness of activities

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Demonstrations ● Workshop 	<ul style="list-style-type: none"> ● Newsletters ● Web sites

3. Description of targeted audience

- Livestock producers
- 4-H youth
- Feed and pharmaceutical industry personnel
- Government agency personnel
- Veterinarians

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	350	1000	0	0
2009	400	1500	0	0
2010	450	2000	0	0
2011	500	2500	0	0
2012	550	3000	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	0	1
2009	0	1
2010	0	1
2011	0	1
2012	0	1

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Number of individuals receiving training and education

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :350 2009 : 400 2010 : 450 2011 :500 2012 : 550

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources
- 302 - Nutrient Utilization in Animals

1. Outcome Target

Number of individuals demonstrating increase in subject knowledge and skills

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :250 **2009 :** 300 **2010 :** 350 **2011 :**400 **2012 :** 450

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources
- 302 - Nutrient Utilization in Animals

1. Outcome Target

Number of producers implementing recommended actions or practices

2. Outcome Type : Change in Action Outcome Measure

2008 :75 **2009 :** 125 **2010 :** 150 **2011 :**200 **2012 :** 250

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources
- 302 - Nutrient Utilization in Animals

1. Outcome Target

Number of producers participating in government cost-share programs for range conservation

2. Outcome Type : Change in Action Outcome Measure

2008 :50 **2009 :** 75 **2010 :** 100 **2011 :**125 **2012 :** 150

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources

1. Outcome Target

Estimated cost of production for North Dakota cattle ranches

2. Outcome Type : Change in Condition Outcome Measure

2008 :390 **2009 :** 385 **2010 :** 380 **2011 :**375 **2012 :** 375

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources
- 302 - Nutrient Utilization in Animals

1. Outcome Target

Number of ranches implementing range management practices

2. Outcome Type : Change in Condition Outcome Measure

2008 :125 **2009 :** 150 **2010 :** 175 **2011 :**200 **2012 :** 225

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Competing Programatic Challenges
- Competing Public priorities
- Appropriations changes
- Government Regulations
- Public Policy changes
- Natural Disasters (drought,weather extremes,etc.)
- Economy

Description

Cattle production cycles and prices; changing priorities; farmer/rancher attitudes; natural disasters and environmental impacts; changing priorities of government agencies and policy makers. Changing government appropriations for conservation programs.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)
- During (during program)

Description

Survey tools will be developed to evaluate the effectiveness of educational programs based on knowledge gained and changes in attitude and behavior.

2. Data Collection Methods

- Mail
- On-Site

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Parent Education

2. Brief summary about Planned Program

Children learn and develop in safe, supportive environments where they experience caring relationships with trusted adults. Parent education has been identified as a critical need and resource for families. Parents and communities will gain understanding of needs in children, learn skills to meet such needs, and develop healthy environments for children from the early years through adolescence.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 802 100% Human Development and Family Well-Being

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Children learn and develop in safe, supportive environments where they experience caring relationships with trusted adults. Parent education has been identified as a critical need and resource for families. Parents and communities will gain understanding of needs in children, learn skills to meet such needs, and develop healthy environments for children from the early years through adolescence. Critical issues related to parenting include family well-being, parental competence, nurturing environments, learning of children, positive guidance, and youth risk behavior.

2. Scope of the Program

- In-State Research
- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Educational programs are an effective means for parents to learn about child development and effective parenting. Parents have a need for information on parenting and childhood issues. Parents can gain useful knowledge, skills and experience for raising children through educational programs and resources.

2. Ultimate goal(s) of this Program

- Improving the quality of family relationships and the overall well-being of children and adolescents through effective parenting. - Improving the knowledge and skills of parents and caregivers. - Enhanced child, family and community well-being through healthy parent-child relationships.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	6.0	0.0	1.0	0.0
2009	6.0	0.0	1.0	0.0
2010	6.0	0.0	1.0	0.0
2011	6.0	0.0	1.0	0.0
2012	6.0	0.0	1.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Develop educational resources on healthy parenting and child development. - Develop presentation and resource materials for staff members and community professionals.- Provide training and education through seminars and workshops.- Identify key and emerging issues to address.- Evaluate the effectiveness of activities.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● One-on-One Intervention ● Education Class ● Group Discussion ● Workshop 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● Public Service Announcement

3. Description of targeted audience

Parents and family caregivers Child care programs, caregivers School system personnel Government agency personnel
Community workers and professionals

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	700	3500	300	500
2009	800	4000	300	500
2010	900	4500	300	500
2011	1000	5000	300	500
2012	1100	5500	300	500

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 : 0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	1	4
2009	1	4
2010	1	4
2011	1	4
2012	1	4

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Percent of individuals demonstrating increase in subject knowledge and skills

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :70 2009 : 75 2010 : 80 2011 :85 2012 : 90

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

1. Outcome Target

Percent of individuals implementing recommended actions or practices

2. Outcome Type : Change in Action Outcome Measure

2008 :50 2009 : 55 2010 : 60 2011 :70 2012 : 75

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

1. Outcome Target

Percent of individuals indicating a change in frequency of specified parenting practices

2. Outcome Type : Change in Action Outcome Measure

2008 :50 2009 : 55 2010 : 60 2011 :70 2012 : 75

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

1. Outcome Target

Percent of individuals indicating a change in other quality indicators of parent-child relationships

2. Outcome Type : Change in Condition Outcome Measure

2008 :50 2009 : 55 2010 : 60 2011 :70 2012 : 75

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

1. Outcome Target

Number of individuals receiving information through materials or training

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :4300 2009 : 5000 2010 : 5600 2011 :6200 2012 : 6800

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Public Policy changes
- Economy
- Populations changes (immigration,new cultural groupings,etc.)
- Competing Programatic Challenges

Description

Limits on family time and availability; competition from media alternatives; lack of knowledge and skills regarding parenting; community awareness; economic stresses; public policy mandates.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- During (during program)

Description

Evaluation studies will be developed to fit with program objectives, audience needs, and capacity of staff members to carry out evaluation efforts.

2. Data Collection Methods

- On-Site
- Whole population

Description

Data collection methods will be developed to fit with program objectives, audience needs, and capacity of staff members to carry out evaluation efforts.

V(A). Planned Program (Summary)

1. Name of the Planned Program

Plant Breeding

2. Brief summary about Planned Program

The combination of environmental factors such as soil type, weather, pests and cultural practices are unique to North Dakota and requires the organization of breeding programs to deal with production problems while improving crop quality. Crop production is hampered each year by pathogens and insect pests. Genetic resistance in the host plant is the most cost-effective and environmentally safe means of reducing losses.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 202 25% Plant Genetic Resources
- 203 25% Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 5% Plant Product Quality and Utility (Preharvest)
- 211 5% Insects, Mites, and Other Arthropods Affecting Plants
- 212 40% Pathogens and Nematodes Affecting Plants

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

The combination of environmental factors such as soil type, weather, pests and cultural practices are unique to North Dakota and requires the organization of breeding programs to deal with production problems while improving crop quality. Crop production is hampered each year by pathogens and insect pests. Genetic resistance in the host plant is the most cost-effective and environmentally safe means of reducing losses. The priorities are to develop and release improved cultivars, germplasm lines and inbreds acceptable to producers in North Dakota and processors. Basic and applied research is conducted to provide information that will facilitate achievement of our breeding goals, improve cultural practices and enhance our understanding of the crops we breed.

2. Scope of the Program

- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Funding will remain available to do this research. Crops will continued to be attacked each year by pathogens and insect pests.

2. Ultimate goal(s) of this Program

Adding value to our crops through our breeding efforts
Enhanced public awareness of our germplasm lines, cultivars and inbreds

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	0.0	0.0	13.0	0.0
2009	0.0	0.0	13.0	0.0
2010	0.0	0.0	13.0	0.0
2011	0.0	0.0	13.0	0.0
2012	0.0	0.0	13.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Develop improved cultivars and inbreds
- Evaluate elite lines from other breeding programs
- Develop resource material
- Identify emerging issues
- Evaluate effectiveness of activities

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● Web sites

3. Description of targeted audience

- Producers
- Processors that utilize the grain
- Crop consultants
- Local and regional commodity groups
- Personnel in agribusiness/agrifinance
- Personnel working for government agencies

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0
2012	0	0	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :3 2009 :3 2010 :3 2011 :3 2012 :3

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	13	0
2009	13	0
2010	13	0
2011	13	0
2012	13	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Estimated dollar value new cultivars bring to North Dakota

2. Outcome Type : Change in Condition Outcome Measure

2008 :35000000 2009 : 35000000 2010 : 35000000 2011 :35000000 2012 : 35000000

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Percent of acreage that our cultivar releases occupy for each of the crops we breed

2. Outcome Type : Change in Condition Outcome Measure

2008 :0 2009 : 0 2010 : 45 2011 :50 2012 : 50

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Changes in breeding priorities that match needs

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :3 2009 : 3 2010 : 0 2011 :0 2012 : 0

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Addition of new breeding programs or addition of responsibilities to existing programs

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1 2009 : 1 2010 : 0 2011 :0 2012 : 0

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Number of teams working together to develop genetic solutions

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :7 2009 : 7 2010 : 7 2011 :7 2012 : 7

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 211 - Insects, Mites, and Other Arthropods Affecting Plants

- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Number of individuals growing improved cultivars

2. Outcome Type : Change in Action Outcome Measure

2008 :14500 **2009 :** 15000 **2010 :** 15000 **2011 :**15000 **2012 :** 15000

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants

1. Outcome Target

Number of other breeding programs using NDSU developed germplasm

2. Outcome Type : Change in Action Outcome Measure

2008 :15 **2009 :** 15 **2010 :** 20 **2011 :**20 **2012 :** 20

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Appropriations changes
- Natural Disasters (drought,weather extremes,etc.)
- Government Regulations
- Public Policy changes
- Economy

Description

Decreased funding, changing priorities, farmer/processor attitudes, natural disasters, economic conditions, crop diseases, and coordination and cooperation with government entities

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- Retrospective (post program)
- During (during program)
- Time series (multiple points before and after program)

Description

{NO DATA ENTERED}

2. Data Collection Methods

- On-Site
- Observation
- Mail
- Sampling
- Telephone

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Soil Science

2. Brief summary about Planned Program

Nitrogen costs are historically high, and a number of surface and groundwaters in North Dakota are impaired with nitrates from over-application in crop land. Re-evaluation of N management and crop needs may result in lower N rates required to maintain yield or sustain profit, while less N is lost to the environment.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 102 60% Soil, Plant, Water, Nutrient Relationships
- 205 40% Plant Management Systems

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Nitrogen costs are historically high, and a number of surface and groundwaters in North Dakota are impaired with nitrates from over-application in crop land. Reevaluation of N management and crop needs may result in lower N rates required to maintain yield or sustain profit, while less N is lost to the environment. The goal is to evaluate N use rates in a variety of crops, investigate better use of manures and residues, include the N contribution of previous crops and residues in N fertilizer recommendations, and investigate the interaction of N with other nutrients and varieties. Another priority is to document current nitrate levels in North Dakota ground and surface waters.

2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Funding will remain available to do this research. Nitrogen costs will remain high and nitrates will continue to be a concern in surface and groundwaters in North Dakota.

2. Ultimate goal(s) of this Program

Grower profit increases
Quality of ground and surface water is enhanced
Alternative sources of N adopted by growers
Wildlife habitat quality improved

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2008	1.0	0.0	3.0	0.0
2009	1.0	0.0	3.0	0.0
2010	1.0	0.0	3.0	0.0
2011	1.0	0.0	3.0	0.0
2012	1.0	0.0	3.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

N rate calibration research projects
 Update producer-oriented resource materials to reflect research results of N rate studies
 Present research results at workshops, field days and conferences
 Evaluate nitrate levels in waterways

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop 	<ul style="list-style-type: none"> ● Web sites ● Newsletters

3. Description of targeted audience

Growers
 Soil testing laboratories
 Government agencies
 Federal land managers
 Consultants, agricultural commodity staff

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

Year	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
	Target	Target	Target	Target
2008	4000	30000	0	0
2009	5000	30000	0	0
2010	5000	30000	0	0
2011	5000	30000	0	0
2012	5000	30000	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	1	2
2009	1	2
2010	1	1
2011	1	1
2012	1	1

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Number of individuals receiving individual assistance

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :3000 2009 : 4000 2010 : 4000 2011 :4000 2012 : 4000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems

1. Outcome Target

Number of individuals decreasing N use

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :2000 2009 : 2000 2010 : 3000 2011 :4000 2012 : 5000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems

1. Outcome Target

Number of individuals using alternative N sources

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :800 2009 : 1000 2010 : 1000 2011 :1000 2012 : 1000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems

1. Outcome Target

Number of individuals implementing recommended action or practice

2. Outcome Type : Change in Action Outcome Measure

2008 :2000 2009 : 2000 2010 : 3000 2011 :4000 2012 : 5000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems

1. Outcome Target

Continued decline of N in ground and surface water (%)

2. Outcome Type : Change in Action Outcome Measure

2008 :2 2009 : 2 2010 : 4 2011 :4 2012 : 6

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems

1. Outcome Target

Estimated dollar value of adopted best management practices (\$)

2. Outcome Type : Change in Condition Outcome Measure

2008 :12000000 2009 : 20000000 2010 : 32000000 2011 :48000000 2012 : 50000000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems

1. Outcome Target

Less commercial N is used (%)

2. Outcome Type : Change in Condition Outcome Measure

2008 :5 2009 : 8 2010 : 12 2011 :15 2012 : 15

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems

1. Outcome Target

Amount of N in ground and surface water is reduced (%)

2. Outcome Type : Change in Condition Outcome Measure

2008 :2 2009 : 2 2010 : 4 2011 :4 2012 : 6

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships

- 205 - Plant Management Systems

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Government Regulations
- Public Policy changes

Description

N costs will remain high for some time; adoption of new N sources and rates; availability of funding for research; resistance of fertilizer industry to reduced sales; N sources in water not from agriculture.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)
- Retrospective (post program)

Description

Extension educator surveys

2. Data Collection Methods

- On-Site

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)**1. Name of the Planned Program**

Weed Science

2. Brief summary about Planned Program

Weeds reduce the economic return from crop and rangeland production, reduce aesthetics of infested areas, and cause detrimental effects on human and animal health. Herbicides have been and will continue to be a widely used tool for weed control; however, weed resistance to herbicides, pressure to minimize input costs of weed control, and questions about proper stewardship of herbicide-resistant crop technology illustrate the need for further research with weed control systems.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)**1. Program Knowledge Areas and Percentage**

- 213 50% Weeds Affecting Plants
- 215 20% Biological Control of Pests Affecting Plants
- 216 30% Integrated Pest Management Systems

V(C). Planned Program (Situation and Scope)**1. Situation and priorities**

Weeds reduce the economic return from crop and rangeland production, reduce aesthetics of infested areas, and cause detrimental effects on human and animal health. Herbicides have been and will continue to be a widely used tool for weed control; however, weed resistance to herbicides, pressure to minimize input costs of weed control, and questions about proper stewardship of herbicide-resistant crop technology illustrate the need for further research with weed control systems. The priority is to conduct research on control of annual and perennial weeds. Research deals primarily with chemical weed-control programs, including herbicide evaluation, antagonism investigation, application technology, adjuvant science, and herbicide-resistant weeds. Research on invasive perennial weeds relies on integration of biological, chemical and cultural methods. Research on weed biology improves the understanding of weed ecology and enhances weed-management strategies.

2. Scope of the Program

- In-State Research

V(D). Planned Program (Assumptions and Goals)**1. Assumptions made for the Program**

Funding will remain available to do this research. Weeds will continue to reduce economic return from crop and rangeland production, and reduce aesthetics of infested areas, and cause detrimental effects on human and animal health.

2. Ultimate goal(s) of this Program

Adding value to our crops through our research efforts
Enhanced public awareness of our research and recommendations

V(E). Planned Program (Inputs)**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2008	0.0	0.0	4.0	0.0
2009	0.0	0.0	4.0	0.0
2010	0.0	0.0	4.0	0.0
2011	0.0	0.0	4.0	0.0
2012	0.0	0.0	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Evaluate new herbicides, herbicide formulations, and new adjuvants 2. Determine antagonisms between herbicides 3. Determine better methods for applying herbicides 4. Determine the prevalence of herbicide resistant weeds

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Demonstrations 	<ul style="list-style-type: none"> ● Web sites ● Newsletters

3. Description of targeted audience

1. Producers 2. Crop consultants 3. Extension state specialists and county educators 4. Commodity groups 5. Personnel in agribusiness and agrifinance 6. Personnel working for government agencies

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0
2012	0	0	0	0

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 2009 :0 2010 :0 2011 :0 2012 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	5	0
2009	5	0
2010	5	0
2011	5	0
2012	5	0

V(H). State Defined Outputs

1. Output Target

- {NO DATA ENTERED}

{NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED} {NO DATA ENTERED}

V(I). State Defined Outcome

1. Outcome Target

Changes in weed science research priorities that match needs

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1 2009 : 1 2010 : 0 2011 :0 2012 : 0

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Yearly updating of Weed Control Guide to reflect new herbicides and knowledge gained through research

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1 2009 : 1 2010 : 1 2011 :1 2012 : 1

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Number of teams working together to develop solutions

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :3 2009 : 3 2010 : 3 2011 :3 2012 : 3

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Development of enhanced weed-management strategies that incorporate knowledge gained on the biology of weeds

2. Outcome Type : Change in Action Outcome Measure

2008 :0 2009 : 1 2010 : 1 2011 :1 2012 : 0

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Improved control of invasive perennial weeds using integrated methods

2. Outcome Type : Change in Action Outcome Measure

2008 :0 2009 : 1 2010 : 1 2011 :1 2012 : 0

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Delayed evolution of herbicide-resistant weeds

2. Outcome Type : Change in Action Outcome Measure

2008 :0 2009 : 1 2010 : 1 2011 :0 2012 : 0

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Estimated dollar value weed-control brings to North Dakota

2. Outcome Type : Change in Condition Outcome Measure

2008 :1000000000 2009 : 1000000000 2010 : 1000000000 2011 :1000000000 2012 : 1000000000

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Percent of producers that utilize our recommendations

2. Outcome Type : Change in Condition Outcome Measure

2008 :90

2009 : 90

2010 : 90

2011 :90

2012 : 90

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Appropriations changes
- Government Regulations
- Public Policy changes
- Economy
- Natural Disasters (drought,weather extremes,etc.)

Description

Decreased funding, changing priorities, changes in federal farm policy, farmer/consumer attitudes, herbicide-resistant crops and weeds, economic conditions, and coordination and cooperation with government entities.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Time series (multiple points before and after program)
- Before-After (before and after program)
- During (during program)
- Retrospective (post program)

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Mail
- Observation
- On-Site
- Sampling

Description

{NO DATA ENTERED}